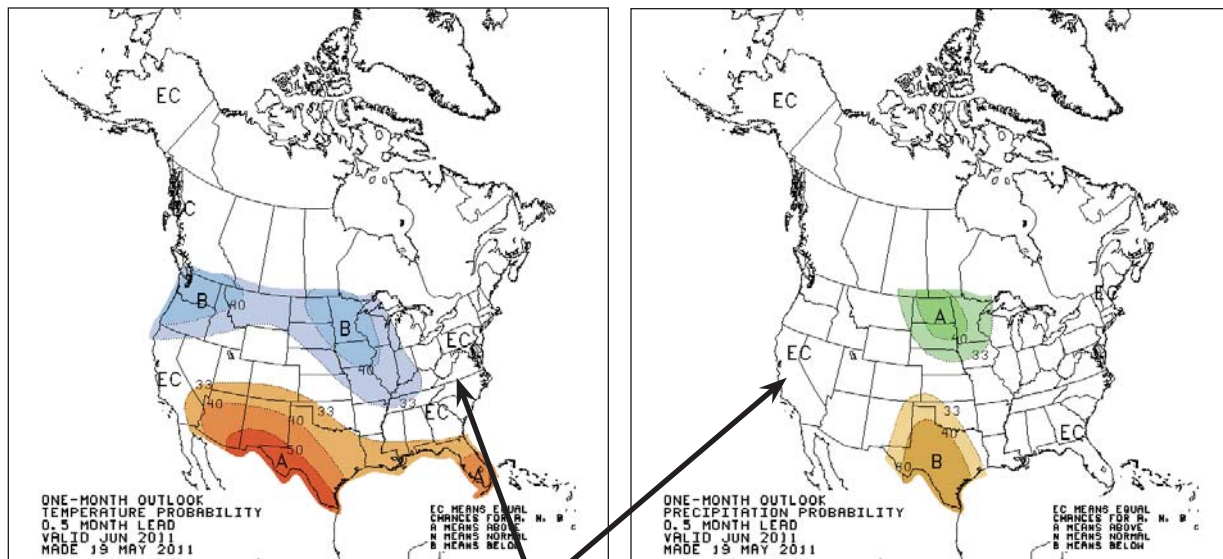


Long Range Outlooks (One-Month & Three-Month)

The interpretation of the categories for long range outlooks is generally the same as for the short range outlooks. However, there are three major differences in these long range outlooks maps:



1. The white areas are shown as EC (Equal Chance) on these maps. These represent areas where there are no strong climate signals from our climate tools to have skill in preferring one category over another. That doesn't mean that there are equal chances of each of the categories occurring – it means that we currently do not have skill in identifying the most likely category. In these areas, it is best to be prepared for all possibilities.
2. In the rare case when the climate tools show a forecast for enhanced probabilities in the middle category (Near-Average), the outlook will represent this as a shaded gray area.
3. There are no climatology (observations) lines on the map.

Acknowledgement
The development of this brochure was a joint effort between the NWS/Climate Services Division (CSD), NOAA/Climate Prediction Center (CPC), and the NWS/Weather Forecast Office, Las Vegas. The outlooks can be found at: <http://www.cpc.noaa.gov>

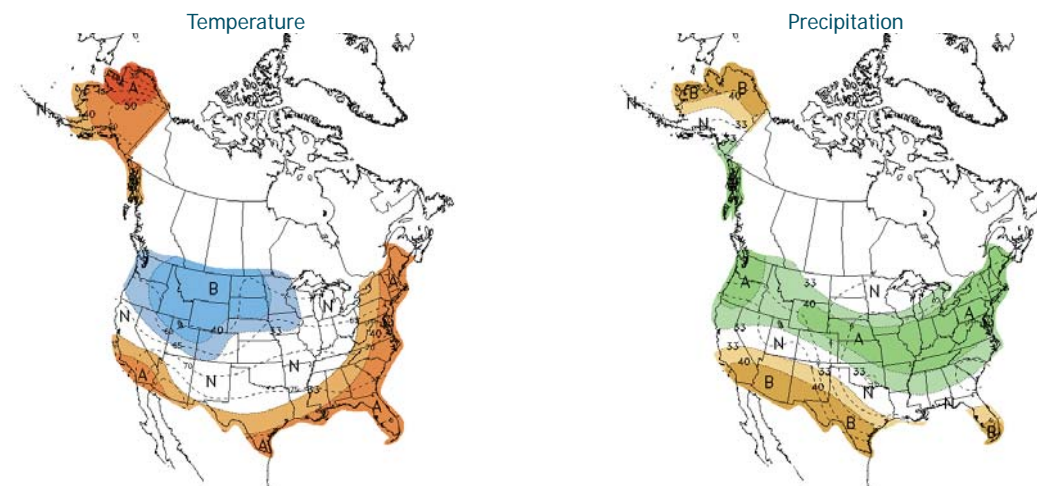
This information has been compiled by the
Climate Services Division
National Weather Service Headquarters
Silver Spring, MD 20910



November 2011

The Climate Prediction Center (CPC) outlooks are “probabilistic forecasts,” which give the expectation, shown as a probability, that conditions will be in the range of one of three categories: Below, Near-Average or Above.

Why are these products called “outlooks” and not “forecasts”? The term *forecast* is generally used to describe a prediction of weather, for which there is a high degree of certainty, while the term *outlook* is generally used for future climate products, which are presented in terms of probabilities. Probabilities are used because of the inherent uncertainties associated with prediction of climate (beyond one week).



How are the three categories (Below, Near-Average, and Above) determined?

These categories are determined by taking data from a reference time period (1981-2010 is currently used), and separating this data into the lowest 1/3, the middle 1/3, and the highest 1/3. These data divisions, representing 33.3% of the data are called *terciles*.

Example for Temperature

The historical daily average temperature from 1981 to 2010 for the represented period of time is ordered from the lowest to highest values. The data is then divided in terciles and the results are:

- The lowest 33.3% of the historical data is classified as **Unseasonably Cold/Cool (B)**
- The middle 33.3% of the historical data is classified as **Seasonable (Near Average) (N)**
- The highest 33.3% of the historical data is classified as **Unseasonably Warm (A)**

Without a climate signal, each of these categories has a probability of occurring 33.3% of the time in the future. Climate outlooks represent a *shift* in the odds of occurrence due to recognized climate signals. Sometimes there is a signal, and sometimes there is not. If there is a signal, the classification on the outlook maps (colors and numbers) represents the *shift* in likelihood of occurrence into one of the three categories. There is still a likelihood that actual conditions will fall in one of the other two categories, but this is not as likely as the classification indicated. *Climate outlooks represent a shift in the odds, not a 100% chance of occurrence.*

Short Range Outlooks (6-10 Day & 8-14 Day)

How To Read these Maps

Climatology: dashed black lines with very small numbers identify the average for that time period

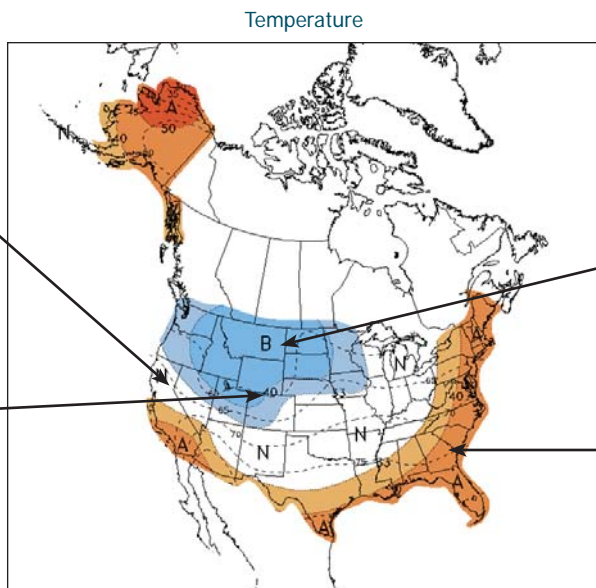
Shift in Probability: Dotted lines with slightly larger numbers around the borders of shaded areas identify the probability of the most likely category to occur

Note that it can be easy to confuse the climatology dashed lines with the shift in probability lines

A means enhanced probabilities in the highest tercile

B means enhanced probabilities in the lowest tercile

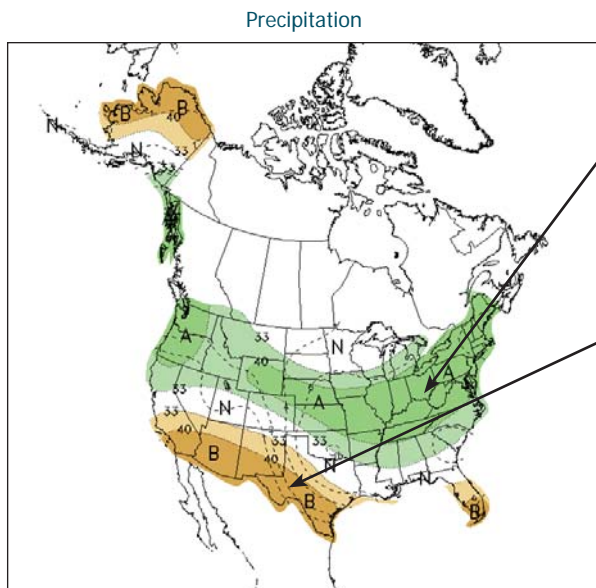
N means enhanced probabilities in the middle tercile (near the climatological average, or seasonable)



Most likely Category: Shaded areas on map identify most likely category to occur

Light Blue to Dark Blue: Most likely category would be for Unseasonably Cold/Cool

Light Orange to Red: Most likely category would be for Unseasonably Warm



Light Green to Dark Green: Most likely category would be for Unseasonably Wet conditions

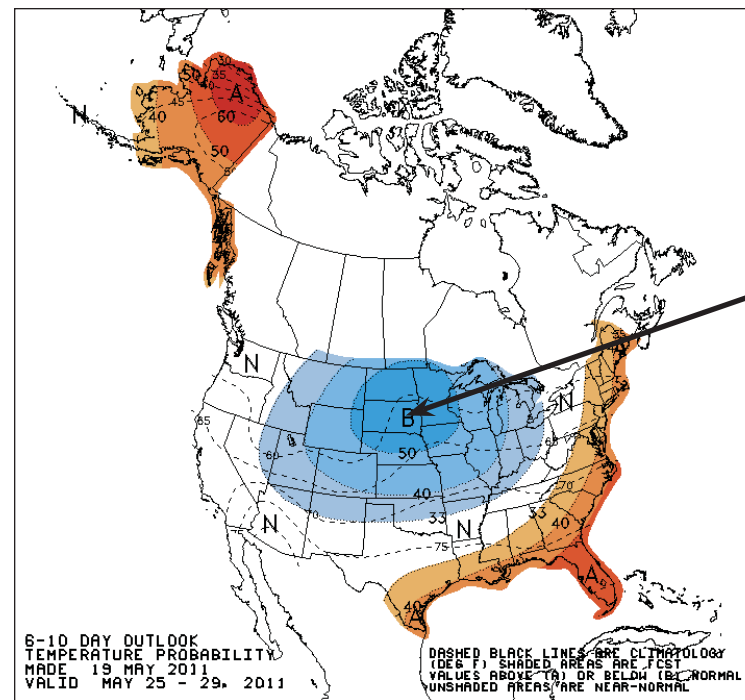
Light Brown to Dark Brown: Most likely category would be for Unseasonably Dry conditions

White: most likely to be near climatological averages for that area

On the precipitation maps, the values for climatology are small and may not always be noticeable

Please note that the CPC outlooks are created for general areas, not for specific locations/cities.

6-10 Day Outlook dated 19 May 2011



What is the temperature outlook for South Dakota during the next 6-10 days?

The classification for South Dakota on this map represents the most likely category to occur. However the other two categories also still have some likelihood of occurrence. Since the probability of all three categories occurring needs to add up to 100%, the probability that this classification exceeds the tercile threshold of 33.3% is subtracted from the opposite end category. This represents the shift in probability from one category to another.

So, in this case for South Dakota, the most likely category is for unseasonably cold/cool conditions (shown in blue), and the probability contour shown is somewhere between 50-60%. For this example, let's say it's 52%. This represents an 18.7% shift above the tercile threshold of 33.3%, therefore the opposite end category (unseasonable warm conditions) would have a 14.6% (33.3% minus 18.7%) likelihood of occurring. The middle category (seasonable) would remain at 33.3%.

In the rare situation when a probability contour exceeds 66.6%, following the above methodology would lead to a negative probability of the opposite category. Hence, when this occurs, the likelihood of the opposite end category is held constant at 3.3% (there is always a slight chance of a rare event occurring), and the seasonable category would then decrease by the appropriate amount to keep the total probability at 100%.

Thus, the outlook for South Dakota would call for: Around a 52% likelihood for unseasonably cold conditions to occur, only a 14.6% chance for unseasonably warm conditions, and a 33.3% chance of seasonable (near average) conditions.

The interpretation for 8-14 day Outlooks is the same as the 6-10 day Outlooks.